

Patent Application No. 10/687,785  
Response to Office Action mailed  
January 27, 2006  
Page 2  
Atty Dkt No. RZMI-P308

### Amendments to the Claims

#### Listing of Claims

The following listing of claims supersedes all previously claims.

1. (Currently Amended) A configurable lookup table extension system, comprising:  
~~a plurality of lookup tables arranged in a first~~ at least one internal memory having  
~~a plurality of lookup tables;~~  
~~a second memory at least one external memory;~~ and  
a flexible controller configured to couple ~~the at least one internal memory with at~~  
~~least one of the plurality of lookup tables to~~ with the second at least one external memory  
through a single memory interface, wherein the flexible controller dynamically allocates  
the at least one external memory in accordance with the plurality of lookup tables thereby  
allowing for an efficient usage of the at least one external memory.
2. (Cancelled)
3. (Currently Amended) The configurable lookup table extension system of ~~claim 2~~  
claim 1, wherein:  
~~the first memory at least one internal memory~~ includes static random access  
memory (SRAM); and  
~~the second memory at least one external memory~~ includes dynamic random  
access memory (DRAM).
4. (Currently Amended) The configurable lookup table extension system of ~~claim 2~~  
claim 1, wherein:  
~~the first and second memories at least one internal memory and the at least one~~  
external memory include static random access memory (SRAM).
5. (Original) The configurable lookup table extension system of claim 1, whercin:

Patent Application No. 10/687,785  
Response to Office Action mailed  
January 27, 2006  
Page 3  
Atty Dkt No. RZMI-P308

the plurality of lookup tables includes Internet Protocol (IP) and Media Access Control (MAC) type tables.

6. (Original) The configurable lookup table extension system of claim 5, wherein:  
the plurality of lookup tables further includes IP MultiCast (MC), IP Next Hop Table (NHT), and IP Longest Prefix Match (LPM) type tables.
7. (Currently Amended) The configurable lookup table extension system of claim 1, wherein:  
at least one of the plurality of lookup tables is configured for packet processing;  
~~the second memory~~ at least one external memory is arranged as a plurality of banks; and  
the flexible controller includes an access queue configured to couple a packet access to at least one of the plurality of banks.
8. (Original) The configurable lookup table extension system of claim 1, wherein:  
the single memory interface includes a plurality of data and address signals.
9. (Currently Amended) The configurable lookup table extension system of claim 1, wherein:  
~~the second memory~~ at least one external memory includes a plurality of table allocations, each table having a configurable depth span and a configurable width span.
10. (Currently Amended) The configurable lookup table extension system of claim 9, wherein:  
the plurality of table allocations includes at least one table having [a] the configurable width span ~~across a space designated for~~ of at least two channels.
11. (Currently Amended) A method of extending a lookup table, comprising:  
~~arranging a plurality of lookup tables in a first memory~~ providing at least one internal memory with a plurality of lookup tables;

Patent Application No. 10/687,785  
Response to Office Action mailed  
January 27, 2006  
Page 4  
Atty Dkt No. RZMI-P308

~~providing a second memory at least one external memory; and~~  
~~providing a flexible controller configured to couple the at least one internal~~  
~~memory with flexibility controlling a coupling of at least one of the plurality of lookup~~  
~~tables to the second memory at least one external memory through a single memory~~  
~~interface, wherein the flexible controller dynamically allocating the at least one external~~  
~~memory between the plurality of lookup tables thereby allowing for an efficient usage of~~  
~~the at least one external memory.~~

12. (Cancelled)

13. (Currently Amended) The method of extending the lookup table of ~~claim 12~~  
claim 11, wherein:

~~the first memory at least one internal memory~~ includes static random memory  
(SRAM); and

~~the second memory at least one external memory~~ includes dynamic random  
access memory (DRAM).

14. (Currently Amended) The method of extending the lookup table of ~~claim 13~~  
claim 11, wherein:

~~the first and second memories at least one internal memory and the at least one~~  
~~external memory~~ include static random access memory (SRAM).

15. (Original) The method of extending the lookup table of claim 11, wherein:  
the plurality of lookup tables includes Internet Protocol (IP) and Media Access  
Control (MAC) type tables.

16. (Original) The method of extending the lookup table of claim 15, wherein:  
the plurality of lookup tables further includes IP MultiCast (MC), IP Next Hop  
Table (NHT), and IP Longest Prefix Match (LPM) type tables.

Patent Application No. 10/687,785  
Response to Office Action mailed  
January 27, 2006  
Page 5  
Atty Dkt No. RZMI-P308

17. (Currently Amended) The method of extending the lookup table of claim 11, wherein:

at least one of the plurality of lookup tables is configured for packet processing;  
the ~~second memory~~ at least one external memory is arranged as a plurality of banks; and

the flexible controller includes an access queue configured to couple a packet access to at least one of the plurality of banks.

18. (Original) The method of extending the lookup table of claim 11, wherein:  
the single memory interface includes a plurality of data and address signals.

19. (Currently Amended) The method of extending the lookup table of claim 11, wherein:  
the ~~second memory~~ at least one external memory includes a plurality of table allocations, each table having a configurable depth span and a configurable width span.

20. (Currently Amended) The method of extending the lookup table of claim 19, wherein:  
the plurality of table allocations includes at least one table having [a] the configurable width span ~~across a space designated for~~ the configurable width span including at least two channels.

21. (Currently Amended) ~~A means~~ An arrangement for extending a lookup table, comprising:

[a] means for ~~arranging a plurality of lookup tables in a first memory~~ providing a first memory with a plurality of lookup tables;

[a] means for providing a second memory; and

[a] means for ~~flexibly controlling a coupling of at least one of~~ providing a flexible controller to couple to the first memory with the plurality of lookup tables to the second memory through a single memory interface, wherein the flexible controller dynamically

Patent Application No. 10/687,785  
Response to Office Action mailed  
January 27, 2006  
Page 6  
Atty Dkt No. RZMI-P308

allocating the second memory between the plurality of lookup tables of the first memory  
thereby allowing for an efficient usage of the second memory.